

WHAT IS CLAIMED IS:

1. A device for video editing for use with a recording and playing device allowing the recording and the playback of video material in order to perform non-linear editing on the video material, comprising:

frame processing means for retrieving a video frame that is a basic construction unit of the video material from said recording and playing device storing video material to be edited and for performing frame processing on the retrieved video frame;

frame storage means for storing a plurality of the video frames after all the frame processing by said frame processing means is completed and for sequentially outputting the plurality of video frames; and

control means for controlling said frame processing means such that at least some types of frame processing by said frame processing means are performed in parallel and the video frames are output from said frame storage means in realtime.

2. A device for video editing according to claim 1 wherein said control means causes frame processing by said frame processing means to be performed in a non-realtime manner.

3. A device for video editing according to claim 1,
wherein:

 said frame processing means comprises:

 at least one image processing means for performing
predetermined image processing on individual video frames;

 first storage means interposed between said
recording and playing device and said frame processing
means; and

 second storage means interposed between each of a
plurality of said frame processing means; and

 said control means controls said recording and playing
device, said first and second storage means, and each of the
frame processing means such that at least two types of
exchange processing of video frames between said recording
and playing device, said first storage means, said second
storage means, and each of said frame processing means, and
image processing on video frames in each of said image
processing means are performed in parallel, and further
controls said frame storage means such that the plurality of
video frames stored in said frame storage means in no
special order are output in a predetermined order.

4. A device for video editing according to claim 1,
further comprising input means for inputting an editing

schedule along a time axis; and

 said control means creates processing management data representing a dependency relationship between the kind of frame processing performed on each video frame and each frame processing based on the editing schedule input through said input means, and controls said frame processing means to be executed based on said processing management data.

5. A device for video editing according to claim 4,
wherein said control means:

 stores a plurality of said created processing management data;

 selects executable frame processing from said plurality of stored processing management data; and

 controls said frame processing means in order to execute said selected frame processing.

6. A device for video editing according to claim 5,
wherein said control means

 defers execution of readout processing when said selected executable frame processing is processing for reading out a video frame from said recording and playing device, and

 selects a plurality of sequential video frames from video frames to be read out at the time when a plurality of

said deferred-execution read-out processing are gathered and then reading out the plurality of selected video frames from said recording and playing device for storage in said first storage means.

7. A device for video editing according to claim 3, said image processing means comprising:

a first image processing portion constructed by hardware; and

a second image processing portion constructed by software.

8. A method for video editing for using a recording and playing device allowing the recording and the playback of video material in order to perform non-linear editing on the video material, comprising:

a frame processing step for retrieving a video frame that is a basic construction unit of the video material from said recording and playing device storing video material to be edited and for performing frame processing on said retrieved video frame;

a frame storage step for storing a plurality of the video frames after all the frame processing by said frame processing step is completed; and

a frame output step for sequentially outputting said

plurality of stored video frames,

wherein at least some types of frame processing at said frame processing step are performed in parallel and video frames are output in realtime at said frame output step.

9. A method for video editing according to claim 8 wherein frame processing at said frame processing step is performed in a non-realtime manner.

10. A method for video editing according to claim 8, wherein;

first and second storage means which can store video frames are used;

said frame processing step comprises:

at least one image processing step for performing predetermined image processing on individual video frames;

a first writing step for reading out video frames from said recording and playing device and then writing them in said first storage means;

a first read-out step for reading out video frames from said first storage means and then providing them to any of image processing steps;

a second writing step for reading out video frames processed at said frame processing step and then writing them in said second storage means; and

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a second read-out step for reading out video frames from said second storage means and then providing them in any of the image processing steps, and

at least two types of frame processing performed at said first and second writing steps, said first and second read-out steps, and said image processing steps are performed in parallel, and the plurality of the video frames stored at said frame storage step in no special order are output in a predetermined order at said frame output step.

11. A method for video editing according to claim 8, further comprising:

an input step for inputting an editing schedule along a time axis; and

a step for creating processing management data representing a dependency relationship between the kind of frame processing performed on each video frame and each frame processing based on the editing schedule input in said input step,

wherein said frame processing step is executed based on said processing management data.

12. A method for video editing according to claim 11, further comprising:

a step for storing a plurality of said created

processing management data; and

a step for selecting executable frame processing from said plurality of stored management processing data,

wherein said selected frame processing is executed at said frame processing step.

13. A method for video editing according to claim 12, wherein said frame processing step comprises the steps of:

deferring execution of readout processing when said selected executable frame processing is processing for reading out a video frame from said recording and playing device;

selecting a plurality of sequential video frames from video frames to be read out at the time when a plurality of said deferred-execution read-out processing are gathered; and

reading out the plurality of selected video frames from said recording and playing device.

14. A method for video editing according to claim 10, wherein said image processing step comprises the steps of:

performing image processing by using hardware; and
performing image processing by using software.

15. A system for video editing for performing non-

linear editing on video material, comprising:

a recording and playing device allowing the recording and the playback of the video material;

frame processing means for retrieving a video frame that is a basic construction unit of the video material from said recording and playing device and for performing frame processing on the retrieved video frame;

frame storage means for storing a plurality of the video frames after all the frame processing by said frame processing means is completed and for sequentially outputting the plurality of video frames; and

control means for controlling said frame processing means such that at least some types of frame processing by said frame processing means are performed in parallel and video frames are output from said frame storage means in realtime.

16. A method for video editing for editing source video data recorded on a recording medium, comprising the steps of:

playing said source video data in frames and performing frame processing on said played frame video data;

storing the frame video data on which said frame processing is completely performed and outputting said stored frame video data as output video data; and

controlling said frame processing such that each frame
of said output video data is realtime video data.